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(54) MANUFACTURE OF MICROPIN FIN FOR HEAT EXCHANGER AND TOOL FOR MACHINING SAID MICROPIN FIN

(57) Abstract:

PURPOSE: To enable smooth formation of a high density micropin fin, by a method wherein cross grooves are formed in a material to be cut having a plurality of parallel grooves by means of a helical outer blade tool with a lead amount having a pitch equal to that of a pin fin, and fins are formed at an uncut part.

CONSTITUTION: A cross groove 4 crossing a longitudinal groove 3 is formed in a material 2 to be cut having the grooves in a plurality of rows by using a helical tool 10. In which case, an uncut part at an intersection part forms a micropin 5 to form a micropin fin 1 in which a number of the micropin 5 form a specified arrangement group. In a tool 10, a notch part 11 having a low

center angle is formed in one spot of a circular sheet formed by a sharp edged material, e.g. a rigid cutter steel. Two radiuses to limit the notch part 11 are twisted in a reverse direction to each other to form a helical shape having a given lead amount 16, and a cutter 13 is peripherally formed in an outer peripheral edge. The lead amount 16 of the tool 10 is made equal to the engraving pitch of the cross groove 4, and in a cutter 13 group, each cutter 13 is formed such that a distance from its lead cutter along a radius is increased and the cutter is protruded by a given cut amount so that a given cut amount is provided to each cutter 13 with the progress of rotation of the tool 10.